

Preface

The last issue of the IBM Systems Journal emphasized areas of current interest in the related fields of communications and computers. The first paper in this issue continues to look at this topical area, its subject being a design tool used to help determine performance characteristics of complex communications systems. This paper, by Stewart, describes a discrete simulation modeling tool used by IBM systems engineers in analyzing the design and performance of telecommunications systems. The tool can predict response times and component loads for elements of a network such as terminals and cluster controllers, as well as for host processors. The paper presents an overview of the model and illustrates its use with a typical example.

As new applications of data processing emerge, it becomes necessary to determine the requirements for supporting them. Many techniques are employed to gather and understand this information. Two papers in this issue explore different techniques for the development of requirements, one in the specific area of office systems, and the other in the general area of distributed data processing.

Ziegler's paper discusses an experiment undertaken to identify problems and potential software solutions in distributed data processing. The author designed and implemented a model which looked at problems in intercomponent communications, systems and response control, and recovery philosophy. The paper reviews incentives for distributed data processing and the design objectives of the model. Then it describes the model and its implementation and discusses the conclusions drawn from the study.

The office environment has been getting increased attention as a possible application area for data processing. The paper by Engel, Groppuso, Lowenstein and Traub discusses a joint study conducted by IBM and a customer to determine office systems requirements. The study led to the development and implementa-

tion of a prototype office system within IBM. The initial study looked at the activities of principals, secretaries, and clerical personnel, and developed some objectives for office systems and the corresponding application requirements. These requirements were then tested by running the prototype office system using a program developed by the IBM Federal Systems Division expressly for the office study.

The paper by Gruhn and Hohl describes the use of a computer in office work at the IBM Thomas J. Watson Research Center. With the availability of computing resources and display terminals at the Center, many office aids have been developed and put to use by both administrative and professional members of this research community. The paper describes the more popular aids, discusses the problems encountered in the growth of the system, and summarizes reactions observed by the authors, who are consultants to the users.

The final paper, by Shah on automated programming, illustrates a way to ease the installation effort in sensor-based applications. Such applications have special programming requirements, yet frequently they are installed by persons who are unfamiliar with computer operations. A number of approaches have been undertaken to ease the installation effort. For the popular application area of energy management, automated programming was developed for the IBM System/7 and improved for the Series/1. Shah's paper describes these programming approaches and their results.

Last year, the Journal published a paper describing a programming discipline called the Data Stream Linkage Mechanism. This issue contains an interesting Forum in which some practical applications of this discipline are discussed.

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